

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/GB2004/050001

International filing date (day/month/year)
16.08.2004

Priority date (day/month/year)
01.05.2004

International Patent Classification (IPC) or both national classification and IPC
E21B19/07, E21B19/10

Applicant
VARCO I/P, INC.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☒ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
Fax: +49 89 2399 - 4465

Authorized Officer

Morrish, S

Telephone No. +49 89 2399-7220



10/5/8990

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/GB2004/050001

10/5/8990
11 MAY 2006

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/GB2004/050001

Box No. II Priority

1. ☒ The following document has not been furnished:

☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. ☐ The International Searching Authority has not been able to consider the validity of the priority claim because a copy of the earlier application whose priority has been claimed was not available to the International Searching Authority at the time that the search was conducted (Rule 17.1). This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

4. Additional observations, if necessary:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/GB2004/050001

Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims Nos. 29-31

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for the whole application or for said claims Nos. 29-31

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form

☐ has not been furnished

☐ does not comply with the standard

the computer readable form

☐ has not been furnished

☐ does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.

☐ See separate sheet for further details

Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees, the applicant has:
- ☐ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☒ not paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
 - ☒ not complied with for the following reasons:
see separate sheet
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☐ all parts.
 - ☒ the parts relating to claims Nos. 1-28, 32-37

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement
- | | | |
|-------------------------------|-------------|------------|
| Novelty (N) | Yes: Claims | 1-28 |
| | No: Claims | 32-37 |
| Inventive step (IS) | Yes: Claims | 1-28 |
| | No: Claims | 32-37 |
| Industrial applicability (IA) | Yes: Claims | 1-28,32-37 |
| | No: Claims | |
2. Citations and explanations
- see separate sheet**

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

PCT/GB2004/050001

IV - Lack of Unity of Invention

This Authority considers that there are two inventions covered by the claims indicated as follows:

- I. **Claims 1-28, 32-37:** apparatus and method for handling pipes.
- II. **Claims 29-31:** a method for indicating slips of an elevator have engaged a pipe.

The reasons for which the inventions are not so linked as to form a single general inventive concept, as required by Rule 13.1 PCT, are as follows.

The prior art has been identified as being **D1: US-A-2002/121160** which discloses a method and apparatus for handling pipes. From a comparison of the disclosure of this prior art and the technical features of independent claim 1 (which is the first independent claim relating to invention I), the features which are known from D1 (see pages 4 and 5 in particular), are the following:

- a body having a tapered surface and at least a first slip and a second slip slidable on the tapered surface,
- a slip actuator for setting said at least first slip and said second slip

so that the technical feature of claim 1 that can be seen to make a contribution over this prior art (Special Technical Features (STF), Rule 13.2 PCT) is:

- the first slip and the second slip have interengaging elements therebetween such that upon actuation of said slip actuator, said first slip is set and said second slip is set by the interengaging elements transferring the setting force from the slip actuator through said first slip to said second slip.

From this STF the objective problem to be solved by the first invention can be construed as:

- providing a slip mechanism whereby the at least two slips are configured with an interengaging member which allows the slips to part from each other. These elements allows the transfer of force from the actuator to the slips therefore setting the slips simultaneously and unsetting the slips evenly, thereby reducing the damage to the pipe member and increasing the grip on the pipe.

From a comparison of the disclosure of this prior art and the technical features of

independent claim 29, the features of said claim that can be seen to make a contribution over this prior art (STF) are:

a piston passing a signal port upon which pressurised hydraulic fluid communicates with hydraulic fluid in a line connected to the signal port which indicates to the controller that the slips are actuated.

From this, the objective problem to be solved can be construed as providing a method whereby the actuation of the slips is indicated to the operator.

The above analysis shows that the special technical features of invention I (claim 1) are neither the same as nor corresponding to those of invention II (claim 29).

Also, examining the possible correspondence by technical effect, one finds the technical effect of the first invention to be the use of interengaging elements to set a slip apparatus and that the technical effect of the second invention to be the use of a hydraulic line to alert the operator that the slips have been set.

This appears to show lack of corresponding technical effect as well. Consequently, neither the objective problem underlying the subjects of the two claimed inventions, nor their solutions as defined by the special technical features allow for a relationship to be established between the said inventions, which involves a single general inventive concept.

In conclusion therefore, the two groups of claims are not linked by common or corresponding special technical features and define two different inventions not linked by a single general inventive concept. The application does not meet the requirements of Unity of Invention as required in Rule 13(1) and (2) PCT.

As no search has been carried out for claims 29 to 31, this opinion will be prosecuted on claims 1 to 28 and claims 32 to 37.

V - Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

V-1 Clarity of Claims

Although **claims 1, 20, 32, 33, 34 and 35** have been drafted as separate independent claims, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought and in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness and as such do not meet the requirements of Article 6 PCT.

V-2 Claims 1 to 19

The document **D1: US-A-2002/121160** is regarded as being the closest prior art to the subject-matter of **claim 1** and discloses an apparatus for handling pipes (see pages 4 and 5 and figure 4),

the apparatus comprising a body having a tapered surface and at least a first slip and a second slip slidable on the tapered surface,
the apparatus further comprising a slip actuator for setting said at least first slip and said second slip.

From this, the subject-matter of independent **claim 1** differs in that said first slip and said second slip have interengaging elements therebetween such that upon actuation of said slip actuator, said first slip is set and said second slip is set by the interengaging elements transferring the setting force from the slip actuator through said first slip to said second slip.

The subject-matter of **claim 1** is therefore novel (Article 33(2) PCT).

The problem to be solved by the present invention may be regarded as providing a slip mechanism whereby the at least two slips are configured with an interengaging member which allows the slips to part from each other. These elements allows the transfer of force from the actuator to the slips therefore setting the slips simultaneously and unsetting the slips evenly, thereby reducing the damage to the pipe member and increasing the grip on the pipe.

The solution to this problem proposed in **claim 1** of the present application is considered as involving an inventive step (Article 33(3) PCT) as none of the documents of the prior art hint at a slip mechanism whereby the slips are set by an element that transfers the setting force to the next-lying slip.

Claims 2 to 19 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

V-3 Claims 20 to 28

The document **D1** is also regarded as being the closest prior art to the subject-matter of **claim 20** and discloses an apparatus for handling pipes (see also pages 4 and 5 and figure 4) whereby a tapered surface has a slip slidable thereon. As **D1** does not disclose a recess and a pin arranged on the tapered surface or a lug arranged on the slip, said claim meets the requirements of the PCT with respect to novelty.

The problem to be solved is the same as that described in V-2 above, namely the transference of the setting force between the slips, which in this case is achieved by a pin and lug system whereby the pin is arranged in a recess and the lug is arranged on the slip. None of the documents of the prior art disclose such an arrangement so said claim is considered to meet the requirements of the PCT with respect to inventive step.

Claims 21 to 28 are dependent on claim 20 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

V-4 Claims 32 to 37

Although **claims 32 to 37** do not meet the requirements of Article 6 PCT with respect to clarity of claims, the subject-matter of said claims appears to be anticipated by **D2: US-B-6 536 520** as it discloses an elevator system having a hydraulically controlled slip mechanism, said elevator further being attached to the bails of a top drive.